NEW CZECH SAILPLANE

Pleasing Lines and High Performance of Zlin 25.

This photograph of the "Sohaj" in flight shows to advantage the elegant lines of this high-performance sailplane

A RECENT product of the Czechoslovakian National Corporation factories at Otrokovice is the Zlin 25 "Sohaj" high-performance sailplane. In line with most other modern Czech aircraft, the Sohaj is æsthetically pleasing, and it will be noticed that it bears a remarkable resemblance to the famous Olympia sailplane—which is at present under construction in this country by Elliotts of Newbury Limited.

Construction is conventional; the fuselage, of oval section—somewhat wider than that of the Olympia—has three longerons and is covered with plywood. The nose section embodies a detachable fairing which facilitates instrument maintenance, and the pilot's cockpit is enclosed by a removable one-piece transparent hood provided with anti-glare curtains. The pilot's seat has been designed to accommodate a normal pack-type parachute. The landing skid is anchored within the fuselage nose and is suspended by two rubber shock-absorbers while the tail skid is suspended in a similar manner with one shock absorber.

The wing is of cantilever type with a single main spar and an auxiliary spar, while the leading edge, forming a torsion box with the main spar, is ply-covered. Attachment to the fuselage is by five bolts, one being a central top bolt for the main spar. Wing tips can be folded downwards after releasing bolts on the two spars, and the centre section top surface is enclosed by a removable inspection cover. Attachment fittings for the ailerons are anchored to ribs reinforced for the purpose.

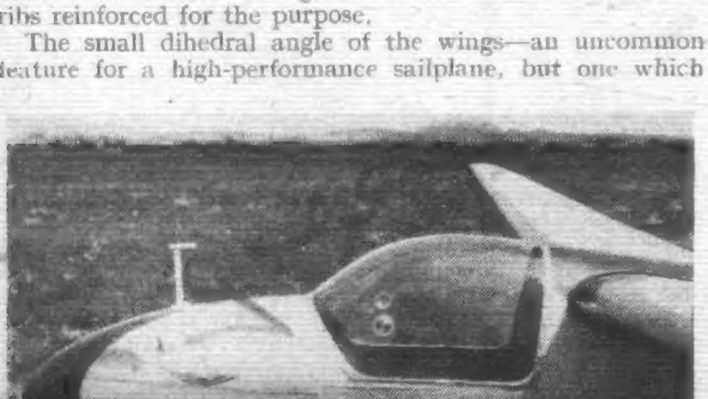
The small dihedral angle of the wings—an uncommon feature for a high-performance sailplane, but one which is in common with the Olympia—combined with the long lever arm of the tail surfaces should afford a high degree of stability and pleasantly harmonized control. Dive brakes are fitted on the underside of the wings and these appear to be of D.F.S. type. A trim tab is fitted in the tailplane which eliminates the necessity of carrying ballast to equalize the varying weights of pilots.

Standard equipment consists of a compass, airspeed indicator, altimeter, rate of climb indicators with 5 metre/second and 15 metre/second scales, and chronometer.

Performance compares favourably with other sailplanes in the same class and future international competitions in which both Sohaj and Olympia sailplanes are entered should provide an interesting comparison of the performance of this new Czechoslovakian design and the world-famous German design.

ZLIN 25 "SOHAJ" DATA.

Span	49.12ft
Length	23.45ft
Height	3.94ft
Wing area	150.7 sq. ft
Weight empty	364 lb
Useful load	210 lb
Gross weight	574 lb
Wing loading	3.8 lb/sq. ft
Gliding ratio at 47 m.p.h.	1 : 27
Minimum sinking speed at 37 m.p.h.	2.13 ft/sec.
Sinking speed at 62 m.p.h.	3.93 ft/sec
Stalling speed	31 m.p.h.
Max. permissible winch towing speed	56 m.p.h.
Max. permissible aero towing speed	94 m.p.h.
Max. permissible diving speed with air brakes open	134 m.p.h.



A moulded plastic cockpit enclosure combines good lines with excellent view.

GAS TURBINE AERODYNAMICS

THERE was a very large attendance last Thursday at the R.Ae.S. lecture on "The Aerodynamics of the Gas Turbine," given by Mr. A. R. Howell, head of the Aerodynamics Department of the National Gas Turbine Establishment. It is to be feared that many in the audience were disappointed. Mr. Howell read a summary of the paper rather hurriedly and not too distinctly, and on many of the slides shown the lettering was so small and so badly done as to be illegible from the back of the hall. Also, there were no advance copies of the paper, so that it was difficult to follow a subject which is fundamentally rather tricky.

It would appear that the immediate lesson to be drawn from the lecture as delivered (the complete paper will, when published in the *Journal*, give a much more complete picture, with numerous references to bibliography, etc.) is that the axial-flow compressor and turbine are amenable to treatment by slight modifications of existing aerodynamic theory, but that the centrifugal compressor cannot be so treated, although the lecturer was careful to point out that this does not mean that the centrifugal type has not been developed to a high degree of efficiency. Mr. Howell thought it would still be many years before designers can know exactly what is happening inside their turbine power plants.